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# Process quality in Portuguese preschool classrooms serving children at-risk of poverty and social exclusion and children with disabilities



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#### ABSTRACT

This study investigates process quality and structural features of classrooms serving children at-risk of poverty and social exclusion and children with disabilities in Portugal. We examine (a) whether the three-domain structure of a widely used standard observational tool, the Classroom Assessment Scoring System (CLASS; Pianta, LaParo, & Hamre, 2008) describes adequately teacher-child interactions in those classrooms and (b) associations between CLASS domains and structural features, including teacher education and group size. The study was conducted in 178 preschool classrooms. Data included classroom observations using the CLASS Pre-K and teacher reports on structural features. Confirmatory factor analysis supported the three domains of teacher-child interactions. In addition, the CLASS domains described teacher-child interactions equally well across classrooms serving children with disabilities and children at-risk of poverty and social exclusion. Finally, we found modest associations between structural features and CLASS organizational and instructional support, suggesting a complex interplay among structural features in predicting levels of teacher-child interactions.

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### 1. Introduction

Currently, across Europe, more and younger children are attending early childhood education and care (ECEC) services. Over the last decade, the percentage of children enrolled in ECEC has risen steadily from 86% in 2001 to 93% in 2011, on average, in European countries (European Commission/EACEA/Eurydice/Eurostat, 2014). In Portugal, universal access to preschool education for 4- and 5-year-olds was recently established by law and, currently, attendance rates are very high, with 93% of 4-year-olds and 98% of 5-year-olds attending center-based ECEC (European Commission/EACEA/Eurydice/Eurostat, 2014).

Importantly, European countries have implemented educational policies aiming to increase participation rates of disadvantaged children in publicly supported ECEC, prioritizing the participation of children at-risk of poverty and social exclusion and children with disabilities (European Commission/EACEA/Eurydice/Eurostat, 2014). Relatedly, about one-third of existing Portuguese preschool classrooms include at

least one child with disabilities (Ministério da Educação, 2007), with legislation on special education prioritizing inclusion in regular ECEC settings (Ministério da Educação, 2008). As a result, new challenges arise from the increasing social and educational diversity in European ECEC settings. Yet, although access and affordability of ECEC have been at the core of policy making, the quality of European ECEC in socially disadvantaged and inclusive settings has been largely overlooked.

Compelling evidence suggests that the quality of ECEC provision is important for child development and well-being (Burchinal, Peisner-Feinberg, Bryant, & Clifford, 2000; Lerkkanen et al., 2012; Mashburn et al., 2008). Two broad aspects are widely acknowledged as important when conceptualizing and measuring ECEC quality: process and structural quality (Cryer, Tietze, Burchinal, Leal, & Palacios, 1999). Process quality focuses on observed interactions between teachers and children and is considered one of the central aspects of high-quality ECEC (Hamre, Pianta, Mashburn, & Downer, 2007). Indeed, several studies have found that sensitive, well-organized, and cognitively stimulating interactions foster children's development in many domains, including language, mathematics, self-regulation, and reduction of behavior problems (Burchinal et al., 2008; Cadima, Verschueren, Leal, & Guedes, 2016; Howes et al., 2008; Mashburn et al., 2008; Weiland, Ulvestad, Sachs, & Yoshikawa, 2013). Process quality is usually assessed

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through observational rating scales (Howes et al., 2008). However, while extant research has been conducted on the effects of process quality, less research has investigated the application of available measures in different contexts. Given the growing diversity in ECEC settings in Europe, more research is needed to test whether observational measures are equally appropriate for diverse ECEC settings such as those serving children with diverse abilities and social backgrounds.

Compared to process quality, structural quality is easier to measure as it refers to quality aspects that are regulatable and relatively stable, such as teacher-child ratio, group size, and teacher education (Blau, 2000; Cryer et al., 1999; Pianta et al., 2005; Vandell & Wolfe, 2000). Structural quality has been perceived as providing the conditions for process quality (Burchinal, 2018; Cryer et al., 1999; Pianta et al., 2005). However, findings are mixed regarding how structural features are associated with process quality (Cryer et al., 1999; Phillipsen, Burchinal, Howes, & Cryer, 1997; Pianta et al., 2005), as described later in this work.

Prior research has shown that there are context-specific aspects derived from the features of different ECEC systems that should be considered when looking both at process and structural quality (Cryer et al., 1999). In addition, it has been suggested that the educational and developmental needs of the children in the classroom can explain important variation in process quality (Pianta et al., 2005). However, we know very little about quality in settings serving children with diverse abilities and social backgrounds in Europe.

In this study, we extend prior research on process quality by (a) examining the extent to which a widely used standardized observational tool, the Classroom Assessment Scoring System (CLASS; Pianta et al., 2008) demonstrates similar psychometric and measurement properties in classrooms serving children atrisk of poverty and social exclusion and children with disabilities in Portugal and (b) examining the associations between structural features and process quality, considering country- and context-specific features of those settings.

#### 1.1. Measuring process quality: the CLASS

Measurement is a key issue of research on process quality. A recent observational measure that has been widely used is the Classroom Assessment Scoring System (Pianta et al., 2008). The CLASS is theoretically grounded in the Teaching Through Interactions framework (Hamre et al., 2013), which posits that the interactions that take place among teachers and children on a daily basis are the primary mechanisms through which children learn (Pianta & Hamre, 2009). This assumption is consistent with the notion that proximal processes are the engines of development (Bronfenbrenner & Morris, 1998). According to this conceptual framework, three distinct but interrelated domains of teacher-child interactions are central to children's learning: Emotional Support, Classroom Organization, and Instructional Support (Hamre et al., 2013; La Paro, Pianta, & Stuhlman, 2004). Emotional Support refers to teachers' warmth and sensitivity towards children and support of children's expression of ideas (Pianta et al., 2008; Pianta & Hamre, 2009). Organizational Support refers to teachers' use of proactive approaches to monitor child engagement, organization of predictable routines, and provision of activities that are inherently interesting (Pianta et al., 2008; Rimm-Kaufman, Curby, Grimm, Nathanson, & Brock, 2009). Instructional Support comprises teachers' encouragement of analysis and reasoning, provision of scaffolding, and engagement in meaningful conversations with children (Hamre et al., 2007; La Paro et al., 2004; Pianta et al., 2008; Pianta & Hamre, 2009). Findings have shown that high levels of Emotional, Organizational, and Instructional Support, as assessed by the CLASS, are associated with academic achievement and social

performance at the end of preschool and first grade (Burchinal et al., 2008; Cadima et al., 2016; Curby et al., 2009; Howes et al., 2008; La Paro et al., 2004; Leyva et al., 2015; Mashburn et al., 2008; Rimm-Kaufman et al., 2009; Weiland et al., 2013). In one recent meta-analysis, results revealed positive, although modest, associations between the CLASS and children's outcomes (Perlman et al., 2016)

The CLASS has been used in several European countries, including Finland (Pakarinen et al., 2010), Portugal (Cadima, Leal, & Burchinal, 2010), the Netherlands (Slot, Leseman, Verhagen, & Mulder, 2015), and Germany (Suchodoletz, Fäsche, Gunzenhauser, & Hamre, 2014). Using the same observational system across countries can be very useful, as it allows for the identification of common and distinct quality features and for examining whether one general framework, such as Teaching Through Interactions, is useful across ECEC settings.

While the CLASS has shown promising results across multiple ECEC settings, several issues remain, which have led researchers to point out the need to refine and strengthen measures of quality using psychometric techniques (e.g., Burchinal, 2018; Burchinal et al., 2009). First, there is some debate regarding the extent to which the three CLASS domains are distinct, as they tend to be highly correlated. The three-factor structure has been replicated in a number of studies (e.g., Pakarinen et al., 2010; Suchodoletz et al., 2014). For instance, the examination of the structure of the CLASS Pre-K in 63 preschool classrooms in Germany indicated that the three-domain model appropriately described the quality of teacher-child interactions in German classrooms, although the associations among domains varied between .63 and .76 (Suchodoletz et al., 2014). However, in a recent study involving 43 classrooms in Portugal, the results from the confirmatory factor analysis showed that a two-factor model in which Emotional Support and Classroom Organization were combined, fitted the data adequately, and the decrease in model fit from the original three-factor solution was statistically non-significant (Cadima et al., 2016). Importantly, knowledge on the extent to which classroom process quality domains are distinct from one another can be important to better understand the links between dimensions of process quality and structural features of ECEC settings.

A second caveat related to the CLASS is the question of whether one particular dimension, Negative Climate, is relevant in describing teacher-child interactions in countries other than the USA. Negative Climate reflects teachers' displays of anger, sarcasm, teasing, and/or harshness (Pianta et al., 2008). In studies conducted in Finland, Chile, and Germany, Negative Climate was poorly correlated with the other dimensions of Emotional Support (Leyva et al., 2015; Pakarinen et al., 2010; Suchodoletz et al., 2014). It has been suggested that the weak contribution of Negative Climate to the Emotional Support domain is a result of its low scores, indicating that negativity was seldom observed (Pakarinen et al., 2010; Suchodoletz et al., 2014). However, it has also been suggested that, in some cultural contexts, such as Chile, negativity may be interpreted differently by adults and considered as an acceptable social means to manage children's behavior (Leyva et al., 2015). Indeed, in both the Chilean and Finish contexts, Negative Climate was moderately correlated with dimensions belonging to the Classroom Organization domain (Leyva et al., 2015; Pakarinen et al., 2010). These findings suggest the relevance of examining the construct of teacher-child interactions in countries outside the USA, and of examining the factorial validity equivalence of the CLASS so that interpretations of cultural variations can be meaningful. Interestingly, decisions on whether to include or exclude Negative Climate in the final model have varied across studies (Leyva et al., 2015; Pakarinen et al., 2010; Suchodoletz et al., 2014).

Importantly, research on ECEC quality outside the USA is still limited, particularly in inclusive and socioeconomic disadvantaged

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